AMENDMENTS TO THE CLAIMS

1-15 (Cancelled)

16. (Currently Amended) A communications network comprising:

an optical transmitter emitting an optical signal at a first wavelength;

an optical communication path optically coupled to said optical transmitter, said optical communication path being configured to carry said optical signal;

a service channel emitter optically coupled to one of said optical communication path and an alternate optical communication path, said service channel emitter supplying a service channel optical signal including data representing signal quality or control information to said one of said optical communication path and said alternate optical communication path, said service channel optical signal being at a second wavelength different than said first wavelength;

a dispersion compensating module optically coupled to said optical communication path, said dispersion compensating module having an associated dispersion characteristic; and

a control circuit operatively coupled to said dispersion compensation module, said control circuit being configured to adjust a dispersion characteristic associated with said dispersion compensating module in response to said data carried by said service channel optical signal.

17. (Currently Amended) A communications network in accordance with claim 16, wherein said data carried by said service channel optical signal ~~include~~ representing the signal quality or the control information is associated with said optical signal having said first wavelength.

18. (Previously Presented) A communications network in accordance with claim 16, further comprising:

a plurality of additional optical transmitters optically coupled to said optical communication path, each of said additional optical transmitters emitting a respective one of a plurality of additional optical signals, each of said plurality of additional optical signals being at a respective one of a plurality of wavelengths, each of said plurality of wavelengths being different from said first and said second wavelengths, said dispersion characteristic being adjusted such that said optical signal and each of said plurality of optical signals has substantially the same dispersion.

19. (Previously Presented) A communications network in accordance with claim 18, wherein said dispersion is substantially equal to zero.

20. (Previously Presented) A communications network in accordance with claim 16, wherein said control circuit includes a thermal regulator coupled to said dispersion compensating module, said thermal regulator being configured to adjust a temperature of said dispersion compensating module.

21. (Previously Presented) A communications network in accordance with claim 16, wherein said control circuit further comprises:

first circuitry configured to sense said service channel optical signal and generate a sense signal in response thereto, said sense signal carrying said data;

second circuitry coupled to said first circuitry and being configured to output a temperature signal in response to said sense signal; and

a thermal regulator coupled to said second circuitry, said thermal regulator compensating a temperature of said dispersion compensating fiber in response to said temperature signal to thereby adjust said dispersion characteristic.

22. (Previously Presented) A communications network in accordance with claim 20, wherein said dispersion compensating module is substantially encased in a thermally conductive medium.

23. (Previously Presented) A communications network in accordance with claim 16, wherein said dispersion compensating module is a first dispersion compensating module, said communication network further comprising:

a second dispersion compensating module optically coupled to said optical communication path, said control circuit being configured to adjust a dispersion characteristic associated with said second dispersion compensating module in accordance with additional data carried by said service channel optical signal.

24. (Cancelled)

25. (Previously Presented) A communications network in accordance with claim 16,

wherein said dispersion compensating module is a first dispersion compensating module having a first dispersion characteristic,

wherein said control circuit is a master control circuit,

the communications network further comprising:

a second dispersion compensating module optically coupled to the optical communication path, said second dispersion compensating module having a second dispersion characteristic; and

a slave control circuit operatively coupled to said second dispersion compensating module,

said master control circuit generating a master control signal and a slave control signal in response to the data carried by the service channel optical signal,

wherein the first and second dispersion characteristics of the first and second dispersion compensating modules are respectively adjusted in response to the master and slave control signals.

26. (Previously Presented) A communications network in accordance with claim 25,

wherein the master and slave control signals substantially equally divide a total amount of dispersion to be compensated between said first and second dispersion compensating modules.

27. (Previously Presented) A communications network in accordance with claim 25,

a plurality of said second dispersion compensating modules each having a respective dispersion characteristic, and

a plurality of slave control circuits each of which is associated with a corresponding one of said second dispersion compensating modules.

28. (Previously Presented) A communications network in accordance with claim 27,

said master control circuit polling each of said slave control circuits to determine the availability of the corresponding second dispersion compensating modules to compensate for dispersion,

said master control circuit generates the master and slave control signals according to the determined availability of each of said second dispersion compensating modules and the data carried by the service channel optical signal.

29. (Currently Amended) A communications network comprising:

an optical transmitter emitting an optical signal at a first wavelength;

an optical communication path optically coupled to said optical transmitter, said optical communication path being configured to carry said optical signal;

a service channel emitter optically coupled to one of said optical communication path and an alternate optical communication path, said service channel emitter supplying a service channel optical signal <u>including data</u>

representing signal quality or control information to said one of said optical communication path and said alternate optical communication path, said service channel optical signal being at a second wavelength different than said first wavelength;

a dispersion compensating module optically coupled to said optical communication path, said dispersion compensating module having an associated dispersion characteristic; and

a control circuit operatively coupled to said dispersion compensation module, said control circuit being configured to adjust a dispersion characteristic associated with said dispersion compensating module in response to data carried by said service channel optical signal,

wherein said control circuit is connected to said service channel emitter, and information output from said control circuit is used by said service channel emitter to generate ~~said~~ an additional service channel optical signal which is supplied to said alternative optical communication path.

30. (Currently Amended) A communications network in accordance with claim 29, wherein said data carried by said service channel optical signal ~~include~~ representing the signal quality or the control information supplied by said service channel emitter is associated with said optical signal having said first wavelength.

31. (Previously Presented) A communications network in accordance with claim 29, further comprising:

a plurality of additional optical transmitters optically coupled to said optical communication path, each of said additional optical transmitters emitting a respective one of a plurality of additional optical signals, each of said plurality of additional optical signals being at a respective one of a plurality of wavelengths, each of said plurality of wavelengths being different from said first and said second wavelengths, said dispersion characteristic being adjusted such that said optical signal and each of said plurality of optical signals has substantially the same dispersion.

32. (Previously Presented) A communications network in accordance with claim 31, wherein said dispersion is substantially equal to zero.

33. (Previously Presented) A communications network in accordance with claim 29, wherein said control circuit includes a thermal regulator coupled to said dispersion compensating module, said thermal regulator being configured to adjust a temperature of said dispersion compensating module.

34. (Previously Presented) A communications network in accordance with claim 29, wherein said control circuit further comprises:

first circuitry configured to sense said service channel optical signal and generate a sense signal in response thereto, said sense signal carrying said data;

second circuitry coupled to said first circuitry and being configured to output a temperature signal in response to said sense signal; and

a thermal regulator coupled to said second circuitry, said thermal regulator compensating a temperature of said dispersion compensating fiber in response to said temperature signal to thereby adjust said dispersion characteristic.

35. (Previously Presented) A communications network in accordance with claim 29, wherein said dispersion compensating module is a first dispersion compensating module, said communication network further comprising:

a second dispersion compensating module optically coupled to said optical communication path, said control circuit being configured to adjust a dispersion characteristic associated with said second dispersion compensating module in accordance with additional data carried by said service channel optical signal.

36. (Previously Presented) A communications network in accordance with claim 29,

wherein said dispersion compensating module is a first dispersion compensating module having a first dispersion characteristic,

wherein said control circuit is a master control circuit,

the communications network further comprising:

a second dispersion compensating module optically coupled to the optical communication path, said second dispersion compensating module having a second dispersion characteristic; and

a slave control circuit operatively coupled to said second dispersion compensating module,

said master control circuit generating a master control signal and a slave control signal in response to the data carried by the service channel optical signal,

wherein the first and second dispersion characteristics of the first and second dispersion compensating modules are respectively adjusted in response to the master and slave control signals.

37. (New) A communications network comprising:

an optical transmitter emitting an optical signal at a first wavelength;

an optical communication path optically coupled to said optical transmitter, said optical communication path being configured to carry said optical signal;

a service channel emitter optically coupled to one of said optical communication path and an alternate optical communication path, said service channel emitter supplying a service channel optical signal to said one of said optical communication path and said alternate optical communication path, said service channel optical signal being at a second wavelength different than said first wavelength;

a dispersion compensating module optically coupled to said optical communication path, said dispersion compensating module having an associated dispersion characteristic; and

a control circuit operatively coupled to said dispersion compensation module, said control circuit being configured to adjust a dispersion characteristic

associated with said dispersion compensating module in response to data carried by said service channel optical signal,

wherein said dispersion compensating module is a first dispersion compensating module having a first dispersion characteristic,

wherein said control circuit is a master control circuit,

the communications network further comprising:

a second dispersion compensating module optically coupled to the optical communication path, said second dispersion compensating module having a second dispersion characteristic; and

a slave control circuit operatively coupled to said second dispersion compensating module,

said master control circuit generating a master control signal and a slave control signal in response to the data carried by the service channel optical signal,

wherein the first and second dispersion characteristics of the first and second dispersion compensating modules are respectively adjusted in response to the master and slave control signals.